BUREAU OF HIGHWAYS REQUEST FOR PROPOSAL

for

QUALIFICATIONS BASED SELECTION FOR PREQUALIFIED SERVICES

The Michigan Department of Transportation (MDOT) is seeking professional services for the project contained in the attached scope of services.

If your firm is currently prequalified for this type of work and you are interested in providing services, please indicate your interest by submitting a Proposal. The Proposal must be submitted in accordance with the latest "Vendor Selection Guidelines for Service Contracts", available on the MDOT website.

For efficiency sake, we are asking that the vendor firm provide 4 paper copies of the Proposal to the MDOT project manager named in the attached scope of services.

These copies must be received by April 1, 2005. Fax and electronic copies are not acceptable.

In addition, provide one unbound copy to:

Regular Mail:

Secretary, Operations Contract Support Michigan Department of Transportation P.O. Box 30050 Lansing, MI 48909

OR

Overnight Mail:

Secretary, Operations Contract Support Michigan Department of Transportation 425 W. Ottawa Lansing, MI 48933

This copy is to be received within three working days after the due date and time specified above. Please do not deliver in person.

Any questions relative to the scope of services must be submitted by e-mail to the MDOT project manager. Any questions must be asked at least three working days prior to the due date and time specified above. All questions and their answers will be placed on the MDOT website as soon as possible after receipt of the questions. The names of vendors submitting questions will not be disclosed.

For a cost plus fixed fee contract, the selected vendor must have a cost accounting system to support a cost plus fixed fee contract. This type of system has a job-order cost accounting

system for the recording and accumulation of costs incurred under its contracts. Each project is assigned a job number so that costs may be segregated and accumulated in the vendor's job-order accounting system.

The selection team will review the information submitted and will select the firm considered most qualified to perform the engineering services based on the proposals. The selected vendor will be contacted to confirm capacity. Upon confirmation, that firm will be asked to prepare a priced proposal. Negotiations will be conducted with the firm selected.

The maximum allowable pages for your proposal shall follow the guidelines detailed in Exhibit F of the Vendor Selection Guidelines (October 2004) for \$25,000 to \$100,000.

MDOT is an equal opportunity employer and MDOT DBE firms are encouraged to apply. The participating DBE firm, as currently certified by MDOT's Office of Equal Opportunity, shall be listed in the Proposal.

The scope of services is attached to this solicitation.

SURVEY SCOPE OF WORK

Hydraulic Survey Limits: As needed for Design

CONTROL SECTION, JOB NUMBER: CS 21022 – JN 79021

GENERAL INFORMATION

The MDOT Project Manager for this project will be:

Mark A Kleikamp, PE 1818 3rd Ave North Escanaba, MI 49829

(906) 786-1830 ext. 357 FAX: (906) 786-1816

Email: kleikampm@michigan.gov

Primary Prequalification Classification: Hydraulic Survey (P/PMS Task #3350)

The anticipated start date of the service: July 11, 2005

The anticipated completion date for the service: October 1, 2005

Disadvantaged Business Enterprise (DBE) Requirement: 0%

NOTES:

The consultant surveyor shall discuss the scope of this survey with the MDOT Project Manager before initiating any work on this project. A detailed Survey Work Plan with an estimate of hours by task <u>must</u> be included in the project proposal.

It is the responsibility of the Professional Surveyor to safeguard all corners of the United States Public Land Survey System, published Geodetic Control and any other Property Controlling corners that may be in danger of being destroyed by the proposed construction project.

I. PROJECT LOCATION

The project is located on US-2&41 in Escanaba Township beginning at the County Road 426 intersection, and continuing easterly to the C&NW railroad structure 3200 feet northeast of the Escanaba River in Delta County. The total project length is 0.9 miles.

II. PROJECT DESCRIPTION

The project scope is to provide the required hydraulic survey data for the US-2 Escanaba

River Bridge (B01 of 21022) replacement. Cross-sections shall be taken at the limits and intervals identified in Attachment A.

III. SCOPE OF CONSULTANT DUTIES

The consultant shall perform a hydraulic survey, which provides geometric data on the stream channel upstream and downstream of the structure. **Two weeks** prior to starting the hydraulic survey, the consultant surveyor shall contact the Design Engineer-Hydraulics/Hydrology to schedule a site visit with an MDOT Hydraulics Engineer. The purpose of the site visit is to discuss details of the survey and to clarify the intent of the survey. At this time the Design Engineer-Hydraulics/Hydrology is Kristen Schuster (517-335-1919). Notes must be taken at the site visit and submitted promptly to the MDOT Project Manager.

Prior to performing the survey, the consultant must contact all landowners upon whose lands they will enter. The contact may be personal, phone, or letter, but must be documented. This notice must include the reasons for the survey on private land, the approximate time the survey is to take place, the extent of the survey including potential brush cutting, and an MDOT contact person (the MDOT Project Manager).

The consultant must make every effort to minimize brush cutting on private property. The use of paint on private property is prohibited.

Cross-sections shall be taken at the limits and intervals specified by the Design Engineer Hydraulics/Hydrology as shown in Attachment A. Channel cross-sections shall be taken normal to the direction of *flood* flow and tied to the project coordinate system so they can be accurately plotted. The sections shall be extended to the edge of the floodplain, to the elevation of the top of the road at the structure, or to a distance beyond the river bank agreed upon with the MDOT Hydraulics Engineer at the site visit. Shots must be taken at approximately six foot intervals through the stream. Any high water marks and date of occurrence (if available) shall be noted.

MDOT shall provide primary vertical control monuments in the North American Vertical Datum (NAVD88 datum) for the project. All vertical work must be tied to the supplied control network in NAVD88 datum.

Additional project benchmarks are intermediate vertical control. Intermediate vertical control for this project shall be established by three wire, or digital differential leveling between two primary vertical control marks. All leveling work shall comply with this survey scope, and the *Michigan Department of Transportation (MDOT) Design Surveys Standards of Practice*, dated April 1, 1998.

Since the hydraulic analysis is to be performed by MDOT staff, the consultant shall meet the following requirements for hydraulic cross-sections:

- 1. Cross-sections shall be submitted electronically in CAiCE format.
- 2. Each cross-section shall be a separate chain in CAiCE named "HYDRO1, HYDRO2", etc. The numbers need not be in sequence. HYDRO chains shall have a Feature Code of HYDRO. Road centerline profiles shall have a Feature Code of CL.
- 3. HYDRO chains must have a CAiCE Description of 10, 20, 30, etc., beginning with 10 at the downstream cross-section and proceeding upstream sequentially.
- 4. Each cross-section shall be submitted with the points in the chain running all left to right, looking downstream.
- 5. The cross-sections shall be submitted sequentially, beginning at the downstream end and proceeding upstream.
- 6. For each cross-section, the vegetation break point (the "friction point" between the natural channel and the surrounding vegetation) shall be shot with a feature code of "RBANK" or "LBANK" on the right or left side of the waterway, respectively. It should have a comment or description of "break point"
- 7. Subsequent vegetation break points, if applicable, shall be shot as "VEGE" with a comment or description such as "friction point-grass to shrub."
- 8. The water surface elevations at each cross section shall have a feature code of "LWSEL" and "RWSEL", taken at the left edge of water and right edge of water, respectively.
- 9. On the cross-section at the upstream face of the abutments, a shot is required on the ground at each abutment face on the stream side. These shots shall be described as "at abutment face."
- 10. On the cross-section at the downstream face of the abutments, a shot is required on the ground at each abutment face on the stream side. These shots shall be described as "at abutment face".

The survey notes must be submitted to the Project Manager in 10" by 12" divided portfolios with flap covers. Each portfolio must be labeled on the outside as follows:

Hydraulic Survey Notes for:

Route []

Location and Project Limits []

By [Organization]

Michigan Professional Surveyor [] License #[]

THE NOTES FOR THE HYDRAULIC SURVEY MUST BE PACKAGED IN A SEPARATE PORTFOLIO. All field measurements, notes, sketched, and calculations must be included in the final transmission.

The project surveyor must ensure that all required information is legible and in a form which is easily accessible to the Hydraulics/Hydrology Unit.

A witness list of horizontal control points set for hydraulics cross-sections shall be provided.

A list containing all primary and project benchmarks, with descriptions, elevations, and datum, must be provided.

IV. PROJECT SCHEDULE

Task <u>Number</u>	Task Description	Anticipated Start Date	Anticipated Finish Date
3350	Conduct Hydraulics Survey	7/11/05	10/01/05

V. PAYMENT SCHEDULE

Compensation for this Scope of Survey shall be on an actual cost plus fixed fee basis.

All invoices/bills for services must be directed to the Department and follow the 'then current' guidelines. The latest copy of the "Professional Engineering Service Reimbursement Guidelines for Bureau of Highways" is available on MDOT's Bulletin Board System. This document contains instructions and forms that must be followed and used for invoicing/billing; payment may be delayed or decreased if the instructions are not followed.

Payment to the Vendor for Services rendered shall not exceed the "Cost Plus Fixed Fee Not to Exceed Maximum Amount" unless an increase is approved in accordance with the contract with the Vendor. All invoices/bills must be submitted within 14 calendar days of the last date of services being performed for that invoice.

Direct expenses will not be paid in excess of that allowed by the Department for its own employees. Supporting documentation must be submitted, with the invoice/bill, for all billable expenses on the Project. The only hours that will be considered allowable charges for this contract are those that are directly attributable to the surveying activities of this Project. Hours spent in administrative, clerical, or accounting roles for billing and support, are not considered allowable hours; there will be no reimbursement for these hours.

Reimbursement for overtime hours will be limited to time spent <u>on this project</u> in excess of forty hours per week. Any variations to this rule should be included in the price proposal.

VI. MONTHLY PROGRESS REPORT

On the first of each month, the Consultant Project Manager shall submit a monthly project progress report to Mark Kleikamp, Project Manager, and Steven Neumann, Region Survey Manager. The monthly progress report shall follow the guidelines in attachment B.

VII. TRAFFIC CONTROL AND MDOT PERMITS

The Consultant shall be responsible for all traffic control required to perform the tasks as outlined in this Project Scope of Design Services.

The Consultant shall be responsible for obtaining up to date access permits and pertinent information for tasks in MDOT Right of Way (ROW). This information can be obtained through Richard Gagnon, Escanaba TSC, (906) 786-1800.

VIII. PRE-QUALIFICATION AND SUBCONTRACTING OF CONTRACT WORK

Any task(s) for which the Consultant is not prequalified must be completed by a Subcontractor that is pre-qualified for that task(s). Any questions regarding prequalification should be directed to Phil Brooks, Prequalification Manager, at (517)335-2514.

The Department's prequalification is not a guarantee or warranty of the subcontractor's ability to perform or complete the work subcontracted. The Consultant remains fully responsible to the Department for completion of the work according to the authorization as if no portion of it had been subcontracted.

All subcontractor communications with the Department shall be through the Consultant to the MDOT Project Manager. This requirement may be waived if a written communication plan is approved by the MDOT Project Manager.

The Department may direct the immediate removal of any subcontractor working in violation of this subsection. Any costs or damages incurred are assumed by the Consultant by acceptance of the authorization. It is further understood that the Consultant's responsibilities in the performance of the contract, in case of an approved subcontract, are the same as if the Consultant had handled the work with the Consultant's own organization.

IX. CONSULTANT RESPONSIBILITIES

A. Perform P/PMS tasks indicated in section IV (Project Schedule). The Consultant shall perform P/PMS task duties as outlined in this scope of work.

B. GENERAL REQUIREMENTS:

- 1. Surveys must comply with all Michigan laws relative to land surveying.
- 2. Surveys must be done under the direct supervision of a Professional Surveyor licensed to practice in the State of Michigan.
- 3. Work in any of the following categories of survey: Road Design, Bridge, Hydraulic, Right-of-Way, Ground Control (Photogrammetric), and/or Geodetic control, must be completed by a survey firm which is prequalified by MDOT.
- 4. Surveys must meet all requirements of this scope of work and the *Michigan Department of Transportation (MDOT) Design Surveys Standards of Practice*, dated April 1, 1998. Please contact the Superior Region Survey Manager to clarify any specific questions regarding these standards.
- 5. Consultants must obtain all necessary permits, including an up-to-date permit from the MDOT Utilities Coordination and Permits Section, required to perform this survey on any public and/or private property.
- 6. The consultant must adhere to all applicable OSHA and MIOSHA safety standards, including the appropriate traffic signs for the activities and conditions for this job.
- 7. Consultants are responsible for a comprehensive and conscientious research of all records, including MDOT records, essential for the completion of this project.
- 8. Measurements, stationing, recorded data, and computations must be in international foot units, unless specified otherwise by the Project Manager.
- 9. MDOT will supply the horizontal coordinate control system for the project. Coordinate values shall be based upon the Michigan Coordinate System of 1983 (MCS 83), North Zone. The consultant shall establish additional intermediate horizontal control points, as needed, to the control base. Horizontal coordinate control supplied by MDOT shall be held fixed, and additional intermediate control established in this survey shall be adjusted to fit the supplied MDOT coordinate system. All final project

coordinates should be adjusted to the project coordinates as defined and established by MDOT Superior Region Surveys. All intermediate control established in this survey, shall be established in compliance with this scope of work and the *Michigan Department of Transportation (MDOT) Design Surveys Standards of Practice*, dated April 1, 1998. A preliminary submittal of the adjusted Horizontal control for the project shall be submitted to the Superior Region Survey Manager, for review and acceptance as soon as it is available.

- MDOT will supply the primary vertical control benchmarks for the project. All elevations must be based upon the North American Vertical Datum of 1988 (NAVD88). Vertical control marks, as provided by MDOT, shall be used as primary vertical control in this project. Intermediate vertical control for this project shall be established by three wire, or digital differential leveling between two primary vertical control marks. All leveling work shall comply with this scope of work and the Michigan Department of Transportation (MDOT) Design Surveys Standards of Practice, dated April 1, 1998. A preliminary submittal of the adjusted Vertical control for the project shall be submitted to the Superior Region Survey Manager, for review and acceptance as soon as it is available.
- 11. Upon beginning this project, and every 90 days thereafter while working on this project, the consultant shall calibrate any Electronic Distance Measuring instrument (EDM) used in the work for this project on a National Geodetic Survey (NGS) Calibration Base Line (CBL), and provide a copy of the test result output from the NGS "Calibrat" software, along with a copy of the specification for the EDM. Should the instrument require adjustment, adjustments shall be made, and the calibration procedures will be repeated after such adjustments have been made. Only the output for the final calibration procedure, showing the instrument to be in calibration, needs to be submitted.
- 12. The survey notes must be submitted to the Superior Region Survey Manager in 10" by 12" divided portfolios with flap covers. As many portfolios should be used as needed to contain all of the required documents and diskettes

13. Each portfolio must be labeled on the outside per the following example:

Survey Notes for:

```
Route, Location and Project Limits [ }
Date[ of submittal]
By [ Organization ]
Michigan Professional Surveyor [ ]License #[ ]
```

- 14. Each submittal is to be divided into six sections. These sections are to be labeled as follows: Administrative, Control, Property, Mapping, and Miscellaneous.
 - a. The administrative section will include a completed copy of the MDOT Form 222(3/99) entitled "SURVEY NOTES: RECEIPT AND TRANSMITTAL," (Contents of the "ADMINISTRATIVE SECTION," shall be listed at the beginning of the "REMARKS" section of form 222), the project's Professional Surveyor's Report on company letterhead, and any documentation with respect to any project specific meetings and /or conversations with MDOT Survey personnel.
 - b. The Control section contains the data collected, and copies of all research documents used, to establish the horizontal and vertical reference systems for the project. It also includes a thorough written synopsis describing how the control systems were established. Documentation of the calibration of instruments used in the survey should be included in this section. This section should also contain a complete list of control coordinates, control traverse raw data, least squares analysis for both control traverse points and benchmarks, and a separate listing of control point coordinates and witnesses for the project. A complete Benchmark list with datum, location, elevation, and description of each benchmark shall also be included. This information must be submitted in hard copy, on 8 ½" by 11" sheets, and ASCII electronic file format on CD's.
 - c. The Property section contains all information that is utilized to detail the real property affected by the project. A synopsis of the property work should be included in this section. Copies of all tax maps, tax descriptions, and adjacent / riparian owners should be included in this section.
 - d. The Mapping section contains all relevant cross-section information to obtain the data for this project. The synopsis of the

cross-section work performed should be included in this section. Control sketches as identified in items 16 & 17 of attachment A are included in this section.

- e. The Miscellaneous section contains any information not included in the previous sections. The surveyor's project report should specify any items included in this section.
- 15. A portfolio may contain several types of data but, no section is to contain more than a single type (i.e., Bridge surveys separate from Road surveys and Hydraulic surveys). All sheets in a portfolio must be marked with the control section, job number, portfolio section name and page number. CD's must be labeled with the control section, job number, data type and file names. All lists shall be on 8½" by 11" sheets.
- 16. The Consultant representative shall record and submit typewritten minutes for all project related meetings to the MDOT Project Manager within two weeks of the meeting. The Consultant shall also distribute the minutes to all meeting attendees.
- 17. The MDOT Project Manager is the official contact for the Consultant. The Consultant must either address, or send a copy of all correspondence to the MDOT Project Manager. The MDOT Project Manager shall be made aware of all communications regarding this project. Any survey related questions, in regard to this project, should be directed to the MDOT Superior Region Survey Manager.

At the completion of this survey and prior to beginning the design of this project, all original field survey notes, all electronic data, and all research records obtained for this project will be considered the property of MDOT and must be sent to the MDOT Superior Region Office, Region Survey Manager, 1818 3rd Ave. N, Escanaba, MI 49829-2720. Please use MDOT's Form 222(3/99) entitled "SURVEY NOTES: RECEIPT AND TRANSMITTAL" for all transmittals. A copy of this transmittal form must also be sent to the Project Manager.

C. WORK RESTRICTIONS

Work restrictions concerning traffic control are unknown at this time. However, the Consultant must use MDOT standard lane closure "maintaining traffic" typical details for any and all lane closures.

D. FIELD SURVEY

The purpose of the field survey is to obtain all information and data required by the project design engineer, to provide survey data for preparation of a hydraulic analysis, and to provide a sufficient history of the area to enable the MDOT Survey Unit, and other surveyors to perform dependable surveys in the future.

E. CONTROL

1. HORIZONTAL

- a. The primary horizontal project coordinate system will be established and defined for this project by MDOT. Horizontal coordinate values shall be a ground measure system based upon, and related to the Michigan Coordinate System of 1983 (MCS 83, (NAD83, CORS96, GEOID03)), North Zone (Zone 2111), by a project combined scale factor, and coordinate shift. All final project data and coordinates shall be adjusted to the project coordinate control system as established by MDOT. Coordinate values must be in international foot units.
- b. Any traverse work must be closed and adjusted between two or more known points on the primary horizontal project coordinate system. Open traverses are NOT acceptable. Unadjusted traverse measurements must produce an error of closure of not greater than 1:20,000. Any permissible error of closure shall be distributed throughout the traverse by means of a suitable least squares adjustment software program.
- c. Control traverse points must not be set greater than 1500 feet nor less than 300 feet apart, semi-permanent in nature, and located to insure their availability for all phases of construction. Exceptions may be made for traverse lengths if approved by the MDOT Superior Region Survey Manager. All traverse points must be tied to the primary horizontal project coordinate system established for this project.
- d. The horizontal project control for this project will be classified as intermediate project control according to the MDOT Standards of Practice dated April 1, 1998. Each control point must be accurately described and witnessed to at least four nearby features by the consultant. Please refer to MDOT's Standards of Practice for the minimum requirements for these points.
- e. A list of all traverse control points on project coordinates must be

- developed which includes <u>datum</u>, point designations, point and location descriptions, horizontal coordinates, and witnesses.
- f. All lists must be printed on 8.5" x 11" sheets and placed on CD. These lists must be in ASCII format.
- g. All field observations, unadjusted traverse computations, least squares adjustment output, and final adjusted coordinates for establishing the horizontal control must be included in the horizontal control section of the portfolio. All other data relating to the horizontal component of the control system must be included in the portfolio.

2. VERTICAL

- All elevations must be based upon the North American Vertical Datum of 1988 (NAVD88). Vertical control marks, as provided by MDOT, shall be used as primary vertical control in this project.
- b. Project benchmarks are intermediate vertical control. Intermediate vertical control for this project shall be established by three wire, or digital differential leveling between two primary vertical control marks. All leveling work shall comply with this scope of work and the *Michigan Department of Transportation (MDOT) Design Surveys Standards of Practice*, dated April 1, 1998.
- c. The following leveling practices must be used:
 - 1. All levels used shall be tested at the beginning of each project, and adjusted if necessary. In addition, any instrument dropped shall be tested before further use. Level testing shall be repeated after no more than 20 days of use if the project leveling takes more than 20 days.
 - 2. Leveling will begin and close on a primary bench mark.
 - 3. Leveling for intermediate control must attain a closure in feet, less than or equal to 0.3048 times 0.012 meters times the square root of the product of distance leveled in kilometers. (Closure in feet # 0.3048ft/m x 0.012m x (K)⁻², where K = distance leveled in kilometers)
 - 4. All project bench marks shall be part of the level run between furnished bench marks.

- 5. Any level run that does not close within required tolerance shall be resolved by either rerunning in the opposite direction or by leveling on to another furnished bench mark. If the loop closes when rerun in the opposite direction, then a run must be made to another known control bench mark to determine the true elevation.
- 7. Turn points are to be "turtles," or driven turn pins.
- 8. All level shots shall be direct readings, a minimum of 1.5 feet above the bottom of the rod. The line of sight shall not be less than 1.5 feet above the ground at any point.
- 9. Backsight and foresight distances from the level must be balanced within 10 percent of the distance. The level rods must be held vertical, using a rod bubble, when the reading is taken.
- 10. Maximum length of sights must not exceed 200 feet and no sight shall be less than 30 feet.
- 11. All readings will be made or interpolated to the nearest 0.001 foot. A rejection limit of 0.006 foot will be maintained between wire readings or electronic observations.
- 12. New project bench marks shall be set at approximate intervals of 1500 feet.
- 13. All control points leveled to shall be a turning point and part of the level circuit side shots are not acceptable.
- 14. The leveling shall be analyzed and adjusted using a least squares adjustment program.

3. GENERAL CONTROL

- a. All horizontal and vertical control points shall be tied to the coordinate system for this project.
- b. The methods used to establish the horizontal and vertical components of the project coordinate control system must be fully discussed in the Surveyor's Project Report.

c. The Consultant must include a sketch or CADD drawing of the project control in the portfolio, showing the project coordinates and elevations.

F. PROPERTY

The property section is comprised of all property information required for this project. This includes all tax maps and tax descriptions. This information will be used, in part, to identify the ownership of the abutting property which may be affected by this project.

G. MAPPING

The mapping section contains all deliverable as described in attachment A.

H. MISCELLANEOUS

Miscellaneous items are all material required by MDOT which are not specifically outlined in any other section of this scope.

I. FINAL REPORT: DELIVERABLES

The consultant must organize and label the various sections of the portfolios as required by in this "Survey Scope of Work." All deliverables are to be included in the final report, unless it is satisfactorily explained in the synopsis why they are not necessary.

It is the responsibility of the consultant to insure that all electronic files submitted to MDOT conform to the required formats in this scope of work and the *Michigan Department of Transportation (MDOT) Design Surveys Standards of Practice*, dated April 1, 1998, and all documents are legible.

The final report for this project shall include the following:

- 1. The first pocket of the first portfolio shall be the "Administrative" section and shall contain:
 - a. MDOT's Form 222(3/99) entitled "SURVEY NOTES: RECEIPT AND TRANSMITTAL," (Contents of the first pocket, "ADMINISTRATIVE SECTION," shall be listed at the beginning of the "REMARKS" section on form 222).

- b. A table of contents, which shall index all contents of the portfolios by section and page number.
- c. The project's Professional Surveyor's Report on company letterhead, written and signed by the project's Professional Surveyor, consisting of the following:
 - i. The limits of the survey and original survey scope as determined by the consultant Surveyor and Design Engineer.
 - ii. A comprehensive report, including a complete synopsis of the survey work performed on this project.
 - iii. The sources, datums and the methods used to establish the project horizontal coordinates, elevations, and the alignment(s) for this project.
 - iv. A detailed synopsis of how the horizontal and vertical control for this project was determined.
 - v. A detailed explanation of anything discovered during the survey of this project that may create a problem for the designer or another surveyor.
 - vi. A statement of certification from the consultant surveyor supervising the project as to compliance with this scope of work and the *Michigan Department of Transportation* (MDOT) Design Surveys Standards of Practice, dated April 1, 1998.
- d. Any documentation with respect to any project specific meetings and /or conversations with MDOT personnel.
- 2. The "Control" Section of the portfolio(s) shall include:
 - a. A copy of the synopsis of how the horizontal and vertical control for this project was determined.
 - b. Copies of all instrument calibration documentation.
 - c. Documentation of horizontal and vertical datum sources, including copies of all datum source documents.

- d. Individual coordinate and witness lists for the horizontal control points, traverse control points, and bench marks. These lists shall identify and describe the type of monumentation, provide the location of the monuments, and list the standard deviation of each monumented point. All lists shall be on 8½" by 11" sheets.
- e. Least squares analysis for horizontal and vertical control.
- f. A complete Benchmark list with datum, location, elevation, and description of each benchmark.
- g. All original field survey notes, all electronic survey data files, all calculation sketches, and all research records obtained for the horizontal and vertical control for this project. All electronic survey data files for control shall be submitted on CD's, specifically labeled. Paper copies of all electronic survey data files, for control data, are required on 8½" by 11" sheets.
- 3. The "Property" section of the portfolio(s) shall contain:
 - a. Legible copies of all tax descriptions, tax maps, and an indexed list of adjoining property owners of record with addresses for the project area.
- 4. The "Mapping" section of the portfolio(s) shall contain:
 - a. The deliverables as identified in attachment A.
- 5. The "Miscellaneous" section of the portfolio(s) shall contain:
 - a. All other materials not included in the other portfolio sections.

ATTACHMENT A

B01 of 21022 JN 79021D US-2 over the Escanaba River Delta County

Please provide the following information:

- 1. All pertinent structure data including water surface elevations, flow lines, and underclearance elevations, both upstream and downstream, at the structure. Include a sketch of the structure showing all of this information.
- 2. One road profile along the crown of the existing roadway.
- 3. Two cross sections, one at the upstream and one at the downstream face of the structure excluding roadway embankment.
- 4. Two cross sections, one 100 feet upstream from the upstream face and one 100 feet downstream from the downstream face of the structure.
- 5. One cross section 200 feet upstream of the upstream face of the structure.
- 6. One cross section 350 feet upstream of the upstream face of the structure.
- 7. Two cross sections downstream at 150 foot intervals, commencing 250 feet downstream of the downstream face of the structure.
- 8. One cross section 700 feet downstream of the downstream face of the structure.
- 9. One cross section 2300 feet downstream of the downstream face of the structure.
- 10. One cross section 4600 feet downstream of the downstream face of the structure.
- 11. All structure data including water surface elevations, flow lines, and underclearance elevations at any other structures encountered within the reach of the survey. Include sketches of these structures showing all of this information.
- 12. First floor elevations of all buildings within the survey limits.
- 13. The riparian owners in the four quadrants of the structure.
- 14. Water surface elevations at each section must be provided, with the date taken. The water surface elevations at each cross section shall be taken at the left edge of water and right edge of water. All water surface elevations should be taken on the same day if possible. If not, note the date taken and any event which may affect the evaluation.

H:\survey scopes\21022B01.doc

- 15. A point list in ASCII format shall be provided, containing columns for point number, North (or Y), East (or X), elevation, and description.
- 16. One control sketch to scale, or CAD drawing, showing the relationship of the cross-sections to the structure and the road.
- 17. One control sketch to scale, or CAD drawing, of the area at the stream crossing, showing a basic map of the bridge including abutments and cross section shots (numbered).



Figure 1 – Approximate Cross Section Locations

ATTACHMENT "B" CS 21022 - JN 79021 B02 of 21022, Escanaba River Bridge

MONTHLY PROGRESS REPORTS

The first two pages of this attachment are the necessary layout of the Monthly progress reports and the last three pages are a completed example.

Control Section 00000 Job Number 00000C Structure Number S00 Date 00/00/00

MONTHLY PROGRESS REPORT

- A. Work accomplished during the previous month.
- B. Anticipated work items for the upcoming month.
- C. Real or anticipated problems on the project.
- D. Update of previously approved detailed project schedule, including explanations for any delays or changes.
- E. Items needed from MDOT.
- F. Copy of Verbal Contact Records for the period (attached).

Control Section 12345 Job Number 11111C Structure Number S01 Date 07/31/95

MONTHLY PROGRESS REPORT

- A. Work accomplished during the previous month.
 - 1. During the last month we completed the Final Right of Way plans and submitted them to Rob Lippert on 07/01/95.
- B. Anticipated work items for the upcoming month.
 - 1. Submit the Preliminary Plans and related material on 08/11/95.
 - 2. Attend the meeting regarding the Ameritech lines on the bridge, scheduled for 08/12/95.
- C. Real or anticipated problems on the project.
 - 1. We foresee no problems at this time.
- D. Update of previously approved detailed project schedule (attached), including explanations for any delays or changes.
 - 1. The design is falling behind schedule because we had problems resolving the geometries of the ramps in relation to the bridge. The Preliminary Plan submittal will be the only task affected by this delay because we will make up the lost time prior to submitting the Final Plans and Specifications.
- E. Items needed from MDOT.
 - 1. Prior to final Plan submittal we will need the latest Special Provision and Supplemental Specification checklist.
- F. Copy of Verbal Contact Records for the period (attached).
 - 1. Discussed bridge and ramp geometries with Tom Myers of MDOT Traffic and Safety Division on 07/24/95.

VERBAL CONTACT RECORD

Control Section 12345 Job Number 11111C Structure Number S01 Date 07/31/95

Joe Engineer talked to Tom Myers and decided to use a 0.05'/ft super on ramp A leading into the bridge.